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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,147	03/27/2001	Indra Laksono	VIXS.0100010	2664

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EXAMINER	
LEE, RICHARD J	
ART UNIT	**PAPER NUMBER**
2613	11

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/819,147	Applicant(s) LAKSONO, INDRA	
	Examiner Richard Lee	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-13,15-20 and 22-68* is/are pending in the application.

4a) Of the above claim(s) *22-56* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-13,15-20 and 57-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 59, 62, and 66 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The particular features of "the encoder is further operative to determine the motion vectors in a normal mode **such that the encoder does not use the first motion vectors in response to the select input having a second state**" as recited in claim 59; "wherein the scalar further comprises a select input, wherein the first memory is enabled to save the motion vectors in response to the select input having a first state, and the first memory is disabled from saving the motion vectors in response to the select input having a second state" as recited in claim 62; and "generating a compressed third video image in response to a normal indicator, **where motion vectors are not reused in response to a normal mode indicator being detected**" as recited in claim 66 are all not fully supported by the Specification and constitutes as new matter.

Regarding claims 59 and 66, the Specification discloses at most as shown at pages 3 and 7 that under normal MPEG encoding motion vectors previously saved in memory RAM2 140 are retrieved and that the decoder would not save motion vectors under a normal mode of operation. Regarding claim 62, the Specification does not teach any details of the first and second states of the scaler with the specifics of enabling and disabling of the saving of motion vectors as claimed.

3. Claims 10, 59, and 62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For examples:

(1) claim 10, line 1, wherein the claim claims the "MPEG" recommendation is indefinite because there are many versions of the MPEG recommendations and the recommends are continuously updated. The scope of the claim limitations cannot change over time, and unless the applicant provides in the remarks section of a response to this Office Action stating the specific MPEG version with the date or a copy of the MPEG recommendation is provided, the claim is considered indefinite;

(2) claim 59, line 1, "scalar" should be changed to "scaler" in order to provide proper antecedent basis for the same as specified at claim 1, line 6; and

(3) claim 62, line 1, "scalar" should be changed to "scaler" in order to provide proper antecedent basis for the same as specified at claim 1, line 6.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4, 6, 10-13, 60, 62, 63, 67, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyce et al of record (5,635,985) in view of Takahashi et al of record (6,005,623).

Boyce et al discloses a low cost joint HD/SD television decoder as shown in Figures 1 and 2A, and substantially the same system and method as claimed in claims 1-4, 10-13, and 68, comprising substantially the same video decoder (i.e., 120, 122, 124, 128, 129, 131-135, 202, 204, 206, 208 of Figure 2A) to receive a video input stream having one or more first motion vectors, the video decoder to provide decoded video and the first motion vectors associated with the video input stream (see column 6, lines 18-38); a first memory (116 of Figure 2A) coupled to the video decoder to store the first motion vectors, wherein storing the plurality of motion vectors further storing the plurality of first motion vectors in response to a mode indicator being in a first state (i.e., the receipt of motion vectors in first memory 116 is identified/acknowledged by a mode indicator for further processing, see column 6, lines 18-38); a down scaler (i.e., 126 of Figure 2A, and see column 12, line 43 to column 13, line 42) coupled to receive the decoded video and to provide a scaled video; a second memory (i.e., 118 of Figure 2A) coupled to the video decoder to store a representation of the decoded video, wherein the representation of the decoded video is the decoded video; and wherein the video input is an MPEG data input stream (see column 1); determining a plurality of first motion vectors associated with a compressed first video image (see column 6, lines 18-38); storing a representation of the first video image after the step of determining (i.e., 118 of Figure 2A).

Boyce et al does not particularly disclose, though, the followings:

(a) an encoder coupled to the scaler and the first memory to provide a compressed representation of the scaled video using the first motion vectors saved in the first memory, wherein the video encoder has a vector generation portion that provides second motion vectors based on the first motion vectors saved in the first memory, and generating a compressed second video image based upon one or more second motion vectors and a second video image, wherein the second video image is a scaled representation of the first video image, wherein the scaled representation is a scaled-down representation as claimed in claims 1, 6, 11-13;

(b) a scaling input to indicate an amount of scaling to be implemented by the scaler; receiving a scaling indicator to indicate an amount of scaling to be applied to the compressed second video image; and wherein the decoder and encoder are part of a transcoder processor as claimed in claims 60, 63, and 67; and

(c) the scalar further comprises a select input, wherein the first memory is enabled to save the motion vectors in response to the select input having a first state, and the first memory is disabled from saving the motion vectors in response to the select input having a second state as claimed in claim 62.

Regarding (a) to (c), Takahashi et al discloses a video transcoder as shown in Figures 2A-2D, and teaches the conventional use of an encoder (i.e., 20-25, 25', 26, 27) being coupled to a scaler (i.e., 28, 29 of Figure 2C) and a first memory (i.e., 26 of Figure 2C) to provide a compressed representation of the scaled video using first motion vectors (see column 9, lines 23-44), wherein the video encoder has a vector generation portion that provides second motion vectors based on the first motion vectors (i.e., the first motion vectors provided to scaling circuit

29 as scaled to provide the second motion vectors, see column 9, lines 23-44), generating a compressed second video image based upon one or more second motion vectors and a second video image, wherein the second video image is a scaled representation of the first video image (i.e., as provided by encoder as shown in Figure 2C), wherein a scaling input for indicating an amount of scaling to be implemented by the scaler, the scaled representation is a scaled down representation (see column 9, lines 23-44, column 12, lines 19-26); and wherein the decoder and encoder are part of a transcoder processor (see Figure 2). In addition, Takahashi et al teaches substantially the same scalar (i.e., 28, 29 of Figure 2C) further comprises a select input, wherein the first memory (i.e., 26 of Figure 2C) is enabled to save the motion vectors in response to the select input having a first state (i.e., when motion vector data is provided from scaler to first memory 26, saving of the motion vectors are enabled), and the first memory is disabled from saving the motion vectors in response to the select input having a second state (i.e., when there is no motion vector data supplied from scaler to first memory 26, first memory 26 is disabled from saving data). Therefore, it would have been obvious to one of ordinary skill in the art, having the Boyce et al and Takahashi et al references in front of him/her and the general knowledge of video transcoders, would have had no difficulty in providing the video encoder being coupled to a scaler and a first memory to provide a compressed representation of the scaled video using first motion vectors, the video encoder with a vector generation portion that provides second motion vectors based on the first motion vectors, wherein the second video image is a scaled representation of the first video image, a scaling input for indicating an amount of scaling to be implemented by the scaler, the scalar having a select input wherein the first memory is enable and disabled in response to the select input, and a transcoder processor all as taught by Takahashi

et al within the system as shown in Figure 2A of Boyce et al for the same well known video transcoding purposes as claimed.

6. Claims 7, 8, 15, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Boyce et al and Takahashi et al as applied to claims 1-4, 6, 10-13, 60, 62, 63, 67, and 68 in the above paragraph (5), and further in view of Yin et al of record (Video Transcoding by Reducing Spatial Resolution).

The combination of Boyce et al and Takahashi et al discloses substantially the same system and method as above, but does not particularly disclose wherein a specific vector of the second motion vectors is based on a plurality of vectors of the first motion vectors, wherein the specific vector of the second motion vectors is based on an average of at least two vectors of the first motion vectors, wherein the step of generating the one or more second motion vectors includes averaging at least a portion of the plurality of first motion vectors to represent a vector in the one or more second motion vectors, wherein a number of vectors in the one or more second motion vectors that represents the second video image is different than a number of vectors in the plurality of first motion vectors that represent the first video image, and wherein the number of vectors in the one or more second motion vectors is less than the number of vectors in the plurality of first motion vectors as claimed in claims 7, 8, 15, 17, 19, and 20. However, Yin et al discloses a video transcoder as shown in Figure 4, and teaches the conventional use of a specific vector of the second motion vectors based on a plurality of vectors of the first motion vectors, wherein the specific vector of the second motion vectors is based on an average of at least two vectors of the first motion vectors (see Figure 1 and section 3.1), wherein a number of vectors in the one or more second motion vectors that represents the second

video image is different than a number of vectors in the plurality of first motion vectors that represent the first video image, and wherein the number of vectors in the one or more second motion vectors is less than the number of vectors in the plurality of first motion vectors (i.e., all the first vectors as shown in Figure 1 are reduced to the single average vector, wherein the single average vector represents the specific vector, and thereby provides the number of vectors in the one or more second motion vectors being less than the number of vectors in the plurality of first motion vectors, see section 3.1). Therefore, it would have been obvious to one of ordinary skill in the art, having the Boyce et al, Takahashi et al, and Yin et al references in front of him/her and the general knowledge of the averaging of motion vectors, would have had no difficulty in providing the specific vector of the second vectors based on a plurality of vectors of the first motion vectors, wherein the specific vector of the second motion vectors is based on an average of at least two vectors of the first motion vectors, wherein a number of vectors in the one or more second motion vectors that represents the second video image is different than a number of vectors in the plurality of first motion vectors that represent the first video image, and wherein the number of vectors in the one or more second motion vectors is less than the number of vectors in the plurality of first motion vectors all as taught by Yin et al as part of the video transcoder processings within the combination of Boyce et al and Takahashi et al for the same well known motion estimation with averaging of motion vectors purposes as claimed.

7. Claims 9, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Boyce et al and Takahashi et al as applied to claims 1-4, 6, 10-13, 60, 62, 63, 67, and 68 in the above paragraph (5), and further in view of Samad et al of record (5,027,203).

The combination of Boyce et al and Takahashi et al discloses substantially the same system and method as above, but does not particularly disclose wherein a specific vector of the second motion vectors is based on a most frequently occurring vector of the first motion vectors, wherein generating the one or more second motion vectors includes selecting a most frequently occurring vector in a portion of the plurality of first motion vectors to represent a vector in the one or more second motion vectors as claimed in claims 9, 16, and 18. The particular video motion estimations involving the motion vector reduction process of providing the most frequently occurring motion vectors is however old and well recognized in the art, as exemplified by Samad et al (see column 15, line 61 to column 16, line 13). Therefore, it would have been obvious to one of ordinary skill in the art, having the Boyce et al, Takahashi et al, and Samad et al references in front of him/her and the general knowledge of motion vector reductions, would have had no difficulty in providing the motion vector reduction process of providing the most frequently occurring motion vectors as taught by Samad et al for the transcoding system as provided in the combination of Boyce et al and Takahashi et al for the same well known motion estimation refinement purposes as claimed.

8. Claims 57, 58, 64, and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Boyce et al and Takahashi et al as applied to claims 1-4, 6, 10-13, 60, 62, 63, 67, and 68 in the above paragraph (5), and further in view of Vainsencher (6,005,624).

The combination of Boyce et al and Takahashi et al discloses substantially the same system and method as above, but does not particularly disclose wherein the first memory comprises a hard drive, wherein the first memory coupled to the video decoder is to store all motion vectors used to build a frame of the video input stream, wherein storing the first motion vectors includes storing the first motion vectors on a hard drive, and wherein the plurality of first motion vectors include all motion vectors used to build a frame of the compressed first video image as claimed in claims 57, 58, 64, and 65. However, Vainsencher discloses a system for performing motion compensation as shown in Figures 1-3, and teaches the conventional use of a memory (112 of Figure 3) coupled to a video decoder (i.e., 102, 104, 106, 108, 110 of Figure 3) to store all plurality of first motion vectors used to build a frame of the compressed video image (see column 8, lines 33-67). It is noted that though Vainsencher teaches that the memory 112 is a SDRAM memory (see column 8, lines 55-57), and not a hard drive memory as claimed. But, Vainsencher does teach the particular use of a hard drive 90 of Figure 2 within the encoder and decoder computer system. It is however considered obvious that such hard drive memory of Vainsencher may certainly be used for storing the motion vectors in place of the SDRAM memory. Therefore, it would have been obvious to one of ordinary skill in the art, having the Boyce et al, Takahashi et al, and Vainsencher references in front of him/her and the general knowledge of motion vector storages, would have had no difficulty in providing the memory 112 for storing all plurality of motion vectors used to build a frame of the compressed video image as

taught by Vainsencher as well as the obvious use of hard drive 90 of Vainsencher for storing the motion vectors over the SDRAM 112 of Vainsencher for the transcoding system as provided in the combination of Boyce et al and Takahashi et al for the same well known storage of motion vectors within a hard drive system for building frames of video data purposes as claimed.

9. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Boyce et al and Takahashi et al as applied to claims 1-4, 6, 10-13, 60, 62, 63, 67, and 68 in the above paragraph (5), and further in view of Mougeat et al (6,236,683).

The combination of Boyce et al and Takahashi et al discloses substantially the same system and method as above, further including wherein the video decoder is to receive the video input stream has a first set of motion vectors representing a first frame of video (i.e., as provided by 1 of Figure 2B of Takahashi et al), where the one or more first motion vectors being at least a portion of the first set of motion vectors and a second set of motion vectors representing a second frame of video (i.e, scaling circuit 29 provides the second set of motion vectors, see column 9, lines 23-44 of Takahashi et al).

The combination of Boyce et al and Takahashi et al does not particularly disclose wherein the first memory coupled to the video decoder to simultaneously store the first set of motion vectors and the second set of motion vectors as claimed in claim 61. However, Mougeat et al discloses an image predictor as shown in Figures 3, 4, and 6, and teaches the particular use of double buffering of motion vectors wherein motion vectors are simultaneously being stored in memory 40 of Figures 3, 4, 6 (see column 2, lines 22-38, column 2, line 66 to column 4, line 19). Therefore, it would have been obvious to one of ordinary skill in the art, having the Boyce et al, Takahashi et al, and Mougeat et al references in front of him/her and the general knowledge of

double buffering memories, would have had no difficulty in providing the simultaneous storage of motion vectors as taught by Mougeat et al for the motion estimation system within the combination of Boyce et al and Takahashi et al for the same well known parallel processing of data storage purposes as claimed.

10. Due to the above new grounds of rejections, the Examiner wants to point out that only pertinent arguments from the amendment filed December 22, 2003 will now be addressed.

Regarding the applicant's arguments at page 16 of the amendment filed December 22, 2003 that the recitation of MPEG in the claims should be limited to variations of MPEG utilizing motion vectors consistent with the disclosure and to the extent necessary, the recitation of MPEG should be limited to those variations known at the time of filing, the Examiner wants to point out that there may be various versions of the MPEG standard between the time the invention was reduced to practice and the time of filing. And unless the applicant provides the dated MPEG version, the metes and bounds of the claimed limitation have not been clearly identified and thus renders the claim indefinite.

Regarding the applicant's arguments at pages 16-17 of the amendment filed December 22, 2003 concerning in general that "... The decoder's use of internal buffer memory 116 to buffer the motion vectors during decoding is different than the decoder providing the first motion vectors, as recited in claim 1 ... the decoder 200 does not provide the first motion vectors as recited, instead it only buffers motion vectors for internal use, which is consistent with the prior art where the motion vectors are not saved. Therefore, the system of Boyce is not capable of storing the first motion vectors as recited. The Office suggests that Takahashi's frame buffers disclose a memory; however, the frame buffers of Takahashi do not disclose storing motion

vectors as recited in claim 1 ...", the Examiner respectfully disagrees. The applicant's attention is directed to column 6, lines 18-38 of Boyce et al where it is taught that the preparser 112 serves to reduce the coded buffer size requirements because the coded data buffer 116 need only be capable of storing a reduced amount of data, part of the data being macroblocks including motion vectors and DCT coefficients. It is clear from this passage of Boyce et al that the buffer 116 do in fact store motion vectors, as claimed.

Regarding the applicant's arguments at pages 17-18 of the amendment filed December 22, 2003 concerning in general that Claim 11 is non-obvious over Boyce, the Examiner wants to point out that such arguments have been addressed in the above.

Regarding the applicant's arguments at pages 18-19 of the amendment filed December 22, 2003 concerning the rejection of claims 9, 16, and 18 in view of the combination of Boyce, Takahashi, and Samad, and in general that "... Samad does not disclose the reuse of any vectors ... Samad does not generate a specific motion vector based on a most frequently occurring vector ... ", the Examiner wants to point out Samad nevertheless teaches a motion vector reduction process involving the selection of the three most frequently occurring motion vectors from a plurality of motion vectors. And it is submitted that such motion vector reduction process as taught by Samad reads on the generation of one or more second motion vectors including selecting a most frequently occurring vector in a portion of the plurality of first motion vectors to represent a vector in the one or more second motion vectors as claimed.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any response to this final action should be mailed to:

Box AF
Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications; please mark "EXPEDITED PROCEDURE") (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (703) 308-6612. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group customer service whose telephone number is (703) 306-0377.

RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

3/4/04